

**Notice of Allowability**

Application No.

09/893,991

Examiner

Jeanne A. Di Grazio

Applicant(s)

CHUNG ET AL.

Art Unit

2871

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to Amendment of 2 September 2004.
2. ☒ The allowed claim(s) is/are Claims 1, 3-11 and 13-20.
3. ☒ The drawings filed on 29 June 2001 are accepted by the Examiner.
4. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) ☒ All b) ☐ Some\* c) ☐ None of the:
    1. ☒ Certified copies of the priority documents have been received.
    2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).
  - \* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
  - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
    - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
  - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date \_\_\_\_\_
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☒ Interview Summary (PTO-413), Paper No./Mail Date 8.
7. ☐ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other \_\_\_\_\_.

## DETAILED ACTION

### *Claims*

Claims 1 and 10 have been amended per Amendment of September 2, 2004. Claims 2 and 12 have been cancelled per Amendment of September 2, 2004. Thus, claims 1, 3-11 and 13-20 are pending.

### *Allowable Subject Matter*

Claims 1, 3-11 and 13-20 are allowed.

The following is an examiner's statement of reasons for allowance:

As to claim 1 (amended), relevant prior art of record did not disclose, alone or in combination, a liquid crystal device comprising: pixel electrodes each having a shape in which a lower right corner and a lower left corner are removed such that the pixel electrodes are substantially bilaterally symmetric about a vertical reference line crossing the pixel electrode's area's center in a direction of data lines and further in combination with Applicant's other recited limitations.

The above structure results in a novel liquid crystal device.

Relevant art, United States Patent 6,078,364 (to Atherton) teaches and discloses a liquid crystal display with a high capacitance pixel. Figure 2 of Atherton illustrates a black matrix (45) having portions removed. However, such removed portions of the black matrix are not indicative of the pixel electrode shape.

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Relevant art, United States Patent 5,058,995 (to Plus) teaches and discloses a pixel electrode structure for liquid crystal display devices. The prior art of Plus, as shown in Figure 1, teaches a conventional pixel electrode with an upper left hand corner (12) of the pixel electrode (11) removed. The corner (12) of the pixel electrode (11) is removed to provide room for the opaque switching device (the thin film transistor "TFT"). However, Plus explains that because the corners (12 = upper left hand corner) of the pixel electrodes (11) are removed, the area of the pixel electrode is reduced and thus display brightness is adversely affected.

Thus, the art of Plus (and or Atherton) would not render obvious a case wherein both lower corners of a pixel electrode are removed.

As to claim 5, relevant prior art of record did not disclose, alone or in combination a liquid crystal device comprising: a pair of a first projection and a second projection projecting from an adjacent scan line at one side, the first projection being separated from the second projection and in each of the pixel areas, the pixel electrode has a projection connected to a TFT, the projection of the pixel electrode being disposed between the first projection and the second projection of the adjacent scan line and further in combination with Applicant's other recited limitations.

The above structure results in a novel liquid crystal display.

Relevant prior art of record, United States Patent 6,078,364 (to Atherton) and United States Patent 6,088,071 (to Yamamoto et al.) do not render obvious Applicant's claimed structure.

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As to claim 10 (amended), relevant prior art of record did not disclose, alone or in combination, a liquid crystal device comprising: pixel electrodes each having a substantially rectangular pattern in which a lower right corner and a lower left corner are by substantially the same amount and wherein the pixel electrode has a pattern configured to yield substantially the same capacitance value for capacitors formed between the pixel and adjacent data line on one side and between the pixel electrode and adjacent data line on the other side and further in combination with Applicant's other recited limitations.

The above structure results in a novel liquid crystal device.

Relevant art, United States Patent 6,078,364 (to Atherton) teaches and discloses a liquid crystal display with a high capacitance pixel. Figure 2 of Atherton illustrates a black matrix (45) having portions removed. However, such removed portions of the black matrix are not indicative of the pixel electrode shape.

Relevant art, United States Patent 5,058,995 (to Plus) teaches and discloses a pixel electrode structure for liquid crystal display devices. The prior art of Plus, as shown in Figure 1, teaches a conventional pixel electrode with an upper left hand corner (12) of the pixel electrode (11) removed. The corner (12) of the pixel electrode (11) is removed to provide room for the opaque switching device (the thin film transistor "TFT"). However, Plus explains that because the corners (12 = upper left hand corner) of the pixel electrodes (11) are removed, the area of the pixel electrode is reduced and thus display brightness is adversely affected.

Thus, the art of Plus (and or Atherton) would not render obvious a case wherein both lower corners of a pixel electrode are removed.

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As to claims 3-4, 6-9, 11 and 13-20, they are dependent either directly or indirectly upon claims with allowable subject matter above.

Please also see the Interview Summary (Paper 8) of 20 February 2004.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeanne A. Di Grazio whose telephone number is (571)272-2289.


The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Kim, can be reached on (571)272-2293. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Jeanne Andrea Di Grazio  
Patent Examiner  
Art Unit 2871

JDG



TARIFUR R. CHOWDHURY  
PRIMARY EXAMINER